

Claims

1. An apparatus for loading and unloading cargo at a sea-side of a ship, the apparatus comprising:
 - 5 a barge having a mooring side corresponding to one side of the ship;
 - a barge anchoring unit for anchoring and releasing the barge at and from a predetermined place;
 - 10 at least one container crane disposed on an upper surface of the barge and being movable in a longitudinal direction of the barge; and
 - at least one drawbridge for connecting an end of the mooring side of the barge to the quay wall.
- 15 2. The apparatus according to claim 1, wherein the barge anchoring unit comprises:
 - a plurality of ballast tanks provided at a lower surface of the barge; and
 - 20 a pumping unit for filling and discharging seawater in and from the ballast tanks.
3. The apparatus according to claim 2, wherein each of the ballast tanks has a cushioning chamber disposed under the ballast tank.
- 25 4. The apparatus according to claim 1, wherein the drawbridge comprises:
 - a bridge deck connected between the quay wall and the barge, the bridge deck having a first end connected to the barge in such a manner that the bridge deck can pivot up and down about the first end of the bridge deck;
 - a support tower installed on the barge; and
 - 30 a deck holder assembly having a first end coupled to a side surface of the bridge deck and a second end

fixed to an upper portion of the support tower, so as to fold and unfold the bridge deck into and from the barge.

- 5 5. The apparatus according to claim 4, wherein the deck holder assembly comprises:

a cylinder hinged to the upper portion of the support tower; and

- 10 6. The apparatus according to claim 4, wherein the cylinder and a second end hinged to the side surface of the bridge deck.

- 15 7. The apparatus according to claim 4, wherein the drawbridge further comprises a wire fixedly connecting the upper portion of the support tower to the barge.

- 20 8. The apparatus according to claim 4, wherein the bridge deck has a second end opposite to the first end of the bridge deck, and the drawbridge further comprises a plurality of roller bearings provided under the second end of the bridge deck, the roller bearings being in contact with the quay wall to connect the second end of the bridge deck to the quay wall when the drawbridge is unfolded.

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8. The apparatus according to claim 4, wherein the bridge deck further comprises a strut installed at the second end of the bridge deck in contact with the quay wall.

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9. The apparatus according to claim 1, further comprising a tugboat for tugging the barge to a location at which the mooring side of the barge is disposed adjacent to the sea-side of the ship.

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